The Potential Impact of Essential Nutrients Vitamins C and D upon Periodontal Disease Pathogenesis and Therapeutic Outcomes

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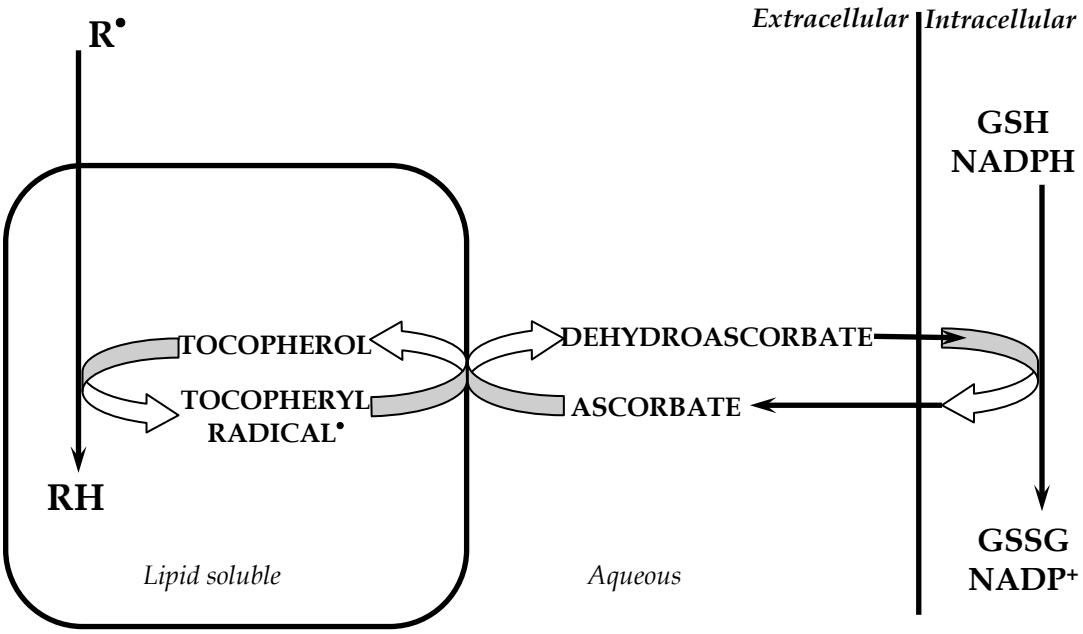

Figure 1 Intracellular reducing power linked to the antioxidant status of both the lipid- and water-soluble environment.

Following vitamin E (tocopherol) oxidation to the tocopheryl radical by an attacking radical ($R^{\bullet}$), alpha tocopherol can be regenerated by a redox reaction with ascorbic acid at the lipid-water interface. The oxidised form of ascorbate can subsequently be regenerated intracellularly by glutathione (GSH)-dependent dehydroascorbate reductase to yield oxidised glutathione (GSSG), or by nicotinamide adenine dinucleotide phosphate (NADPH)-dependent dehydroascorbate reductase to yield oxidised $NADP^{+}$.

Figure 2 Scorbutic gingivitis is reported at levels <10mg/day vitamin C intake**.**